

PLO2

ADAPTING LANDSCAPES FOR CLIMATE CHANGE: LINKING EUROPEAN POLICY TO LOCAL LEVEL LANDSCAPE DEVELOPMENT

Authors:

Opdam P. ¹

Institutions:

¹ Wageningen University, Land Use Planning, Wageningen, The Netherlands

Implementing adaptation measures to mitigate climate change impacts are urgent because their development will take long. Because knowledge of underlying mechanisms is still imperfect, planning of spatial adaptation is working in uncertainty. The challenge faced in biodiversity conservation shows how climate change will disrupt our current paradigms. If species distribution patterns shift across continents, and weather extremes aggravate the effects of habitat fragmentation, what can be done to prevent further loss of biodiversity in ecosystems? Vos et al (J. appl. ecol 2008) suggested two spatial adaptation strategies: (1) to increase the connectivity between ecosystem networks on a large spatial scale, and (2) to increase the area and density of ecosystem networks in regions where dispersal sources are small and widely dispersed. These strategies must be implemented in the variable context of local land use, economic development, nature conservation attitudes and planning culture. In the absence of a top-down spatial planning policy, it will be interesting to find cost-effective adaptation measures consistently across large scale levels.

A challenge for science is to develop methods for implementing these strategies in local landscape planning. As an example, the case for biodiversity is elaborated. Firstly, at the European scale, we need to identify regions where conservation or improvement of connectivity is urgent and beneficial. We also need to identify ecosystem types with highest priority, e.g. because of vulnerability to fragmentation and because they contain many species that respond to shifting climate zones. We further need to identify opportunities determined by other types of land use, e.g. wetland restoration may contribute to flood prevention and to the avoidance of summer drought damage in agricultural crops. Last but not least, we need planning tools to facilitate local landscape planning to include large scale aims, as well as policy instruments to stimulate appropriate landscape measures.